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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,848	01/18/2002	Norman G. Anderson	2315-148	3044

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EXAMINER

LU, FRANK WEI MIN

ART UNIT PAPER NUMBER

1634

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,848

Applicant(s)

ANDERSON ET AL.

Examiner

Frank W Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/23/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-25,30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-25,30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/18/2002 (original) is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. Applicant's response to the office action filed on August 20, 2003 has been entered and a terminal disclaimer filed on August 20, 2003 has been approved. The claims pending in this application are claims 18-25, 30, and 32. Rejection and/or objection not reiterated from the previous office action are hereby withdrawn based on amendment filed on August 20, 2003. After carefully reconsider available prior art, the prosecution is reopened.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

3. Claims 18-22, 25, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis *et al.*, (US Patent No. 4,624, 835, published on November 25, 1986).

Davis *et al.*, teach microcentrifugation tube for the concentration of samples for electron microscope.

Regarding claim 18, since Figure 5 shown by Davis *et al.*, teach a centrifuge tube 10 comprising an upper region, a middle region and a low region wherein an inner diameter of said upper region is larger than an inner diameter of said lower region, wherein said upper region is separated from said lower region by said middle region having at least one portion with parallel

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inner sides and an overall decreasing diameter from said upper region toward said lower region and wherein said lower region has a closed bottom, claim 18 is anticipated by Davis *et al.*.

Regarding claim 19, according to the dictionary, “serrate” means “notched or toothed” (see the attached dictionary), since Davis *et al.*, teach that another alternative embodiment of the centrifuge tube 10, score 16, includes a notch (see Figure 2, lines 65-68 in column 3, and lines 1-3 in column 4), claim 19 is anticipated by Davis *et al.*.

Regarding claims 20 and 25, the claims are drawn to the tubes of claim 18 wherein said lower region has an inner diameter small enough to trap an air bubble between two layers of liquid such that the air bubble will keep said two layers of liquid separate so long as said centrifuge tube is at rest as recited in claim 20 and wherein said tube is prepared from materials such that said tube can be centrifuged at velocities high enough to band viruses in CsCl gradients without said tube breaking as recited in claim 25. Claims 20 and 25 only recite two intended uses of the centrifuge tube recited in claim 18. It is known that a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) and while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (see MPEP 2114). Since Davis *et al.*, teach all structure limitations recited in claims 18, 20, and 25, claims 20 and 25 are anticipated by Davis *et al.*.

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Regarding claim 21, Davis *et al.*, teach that the width of the bases 36 and 38 of the trapezoidal horizontal cross-section in tip section 30 are approximately 0.25 millimeters and 0.12 millimeters respectively (see column 4, lines 42-51). As shown in Figures 3 and 4, the tip section 30 and the width of the base 38 of the trapezoidal horizontal cross-section in tip section 30 are a lower region of the centrifuge tube and the inner diameter of said lower region of the centrifuge tube respectively. Since the width of the base 38 of the trapezoidal horizontal cross-section in tip section 30 (ie., the inner diameter of said lower region of the centrifuge tube) is 0.12 mm and it is known that 1 inch equals to 25 mm, the inner diameter of said lower region of the centrifuge tube taught by Davis *et al.*, is 0.0048 inch ($0.12/25$), which is smaller than 0.25 inch as recited in claim 21.

Regarding claim 22, Davis *et al.*, teach that the tip 30 has a length 34 of approximately 1 millimeter (see column 4, lines 42-51). Since Figure 3 shows that length 34 is about 1/8 (12.5%) of the length of the centrifuge tube, Davis *et al.*, disclose that said lower region is at least 5% of the total length of said tube as recited in claim 22.

Regarding claim 32, since Figure 5 shows that the upper region of the centrifuge tube taught by Davis *et al.*, has an outer diameter larger than an outer diameter of the lower region of the centrifuge tube, claim 32 is anticipated by Davis *et al.*.

Therefore, Davis *et al.*, teach all limitations recited in claims 18-22, 25, and 32.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis *et al.*, as applied to claims 18-22, 25, and 32 above, and further in view of Simmonds *et al.*, (US Patent No. 4,260,873, published on April 7, 1981).

The teachings of Davis *et al.*, have been summarized previously, *supra*.

Davis *et al.*, do not disclose to polish the inner surfaces of a centrifuge tube using vapor polishing as recited in claim 23.

Simmonds does teach to polish the inner surfaces of a centrifuge tube using vapor polishing (see columns 1 and 2).

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Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have used a vapor polishing agent to polish the inner surfaces of a centrifuge tube in view of the patent of Simmonds. One having ordinary skill in the art would have been motivated to do so because vapor polishing would remove oxidized plastic, dissolve uncovered plastic in a centrifuge tube, and make a smooth inner surface for the centrifuge tube (see Simmonds *et al.*, column 1). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to polish the inner surfaces of a centrifuge tube using vapor polishing.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis *et al.*, as applied to claims 18-22, 25, and 32 above, and further in view of Saunders *et al.*, (US Patent No. 5,550,060, published on August 27, 1996).

The teachings of Davis *et al.*, have been summarized previously, *supra*.

Davis *et al.*, do not disclose a centrifuge tube whose inner surfaces are coated with an adhering polymer as recited in claim 24.

Saunders *et al.*, do teach to coat the inner surfaces of a centrifuge tube with an adhering polymer (see columns 11 and 12).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have coated the inner surfaces of a centrifuge tube with an adhering polymer in view of the patent of Saunders *et al.*. One having ordinary skill in the art would have been motivated to do so because a centrifuge tube having an inner surface coating

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would improve cell separation result (see Saunders *et al.*, second paragraph in column 6 and claim 1 in column 16). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to coat the inner surfaces of a centrifuge tube with an adhering polymer.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis *et al.*, as applied to claims 18-22, 25, and 32 above, and further in view of Finney *et al.*, (US Patent No.4,358,425, published on November 9, 1982).

The teachings of Davis *et al.*, have been summarized previously, *supra*.

Davis *et al.*, do not disclose a centrifuge tube made by polycarbonate as recited in claim 30.

Finney *et al.*, teach a centrifuge tube made by polycarbonate or polysulfone (see column 2, last paragraph).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to made a centrifuge tube using polycarbonate in view of the patent of Finney *et al.*. One having ordinary skill in the art would have been motivated to do so because Finney *et al.*, have shown that centrifuge tube is made by polycarbonate or polysulfone and it is a routine practice for one having ordinary skill in the art to make a centrifuge tubes using a plastic material such as polycarbonate since it is known that most centrifuge tubes are made by different plastic materials. One having ordinary skill in the art at the time the invention was made

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would have been a reasonable expectation of success to make a centrifuge tubes using polycarbonate.

Conclusion

8. No claim is allowed.
9. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (703) 305-1270 (before January 13, 2004) or 571-272-0746 (after January 13, 2004). The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703) 308-1119.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

Frank Lu
PSA
November 19, 2003



**BJ FORMAN, PH.D.
PRIMARY EXAMINER**